INTRODUCTION

The Hanford Site Performance Report provides status for work performed by:

- U.S. Department of Energy, Richland Operations Office (RL);
- Project Hanford Management Contract (PHMC) through Fluor Daniel Hanford, Inc. (FDH) and its subcontractors;
- Environmental Restoration Contract through Bechtel Hanford Inc. (BHI), and its subcontractors;
- Pacific Northwest National Laboratories (Pacific Northwest) for Science and Technology support to the Environmental Management (EM) mission.

Notable accomplishments include completion of the Tank Waste Remediation System (TWRS) Phase 1 Privatization Site Characterization Draft Data Package (Project W-519, Site Infrastructure) 13 days ahead of schedule; completion of ten vapor samples 19 days ahead of schedule; the Washington State Department of Health (WDOH) approval of upgrades to the air monitoring system for Project W-030, “Tank Farm Ventilation Upgrades”; WDOH approval of the K West Basin Air Sparge System Notice of Construction (NOC) permit; resumption of B Plant 221-B canyon deactivation activities, completion of RL Fissile Material Movement Restriction (FMMR) Phase I Readiness Assessment; completion of Plutonium Reclamation Facility (PRF) elevator restoration enabling removal of cleanup waste from Room 40; issuance of Revision 4 to the Hanford Facility Resource Conservation Recovery Act (RCRA) Permit; conduct of Fiscal Year (FY) 2000 Budget Formulation Public Meetings; and, release of the Safety Requirements Document (SRD) and the Integrated Safety Management Plan (ISMP) draft evaluation reports for British Nuclear Fuels Limited, Inc. (BNFL) and Lockheed Martin Advanced Environmental Systems (LMAES) for public comment.

Fiscal year-to-date (FYTD) milestone performance (Enforceable Agreement [EA], U.S. Department of Energy-Headquarters, Field Office, and RL) shows that 90 milestones (80 percent) were completed on or ahead of schedule; 7 milestones (6 percent) were completed late; and 16 milestones (14 percent) are overdue. The overdue milestones are associated with six projects and do not share a common cause. Twenty-four milestones are identified as in jeopardy; seven of these are EA (two in TWRS and five in Environmental Restoration [ER]). Details can be found in the milestone exception reports in each project section beginning on page VI-1.

FYTD milestone performance statistics do not reflect 28 FY 1997 milestones that were not completed: TWRS - 22, Waste Management - 3, Facility Stabilization - 1, Landlord - 1, and EM-50 - 1. These milestones, which are listed on pages A:V-3 through A:V-5, are being closely monitored and will be completed late or dispositioned (eliminated or incorporated into current workscope) through the baseline change control process.

OVERVIEW

Significant TWRS accomplishments in February 1998 include completion of the TWRS Phase 1 Privatization Site Characterization Draft Data Package (Project W-519, Site Infrastructure) 13 days ahead of schedule; completion of ten vapor samples 19 days ahead of schedule; WDOH approval of upgrades to the air monitoring system for Project W-030, Tank Farm Ventilation Upgrades; support to the RL/BHI Groundwater Vadose Zone Sitewide Integration Plan; and award the C-106 Heel Removal Contract four days ahead of schedule. The TWRS FY 1998 Multi-Year Work Plan is not yet approved; baseline change request TWR-98-033 bridging the FY 1997/FY 1998 workscope is in process. When this baseline change request (BCR) is approved, the 22 uncompleted FY 1997 milestones will be deleted or replaced with FY 1998 milestones.

The Waste Management Project continued to make favorable progress. In February, 904 183-H containers were overpacked exceeding the established performance indicator of 900. The Treated Effluent Disposal Facility and Effluent Treatment Facility Quarterly Discharge Monitoring Reports were completed three days ahead of schedule. A letter report identifying implementation of the 222-S Laboratory redesigned laboratory process, critical skills, depth of staff, and actions to maintain technical capabilities was completed.

Canister Storage Building (CSB) construction is slightly behind schedule (83 percent complete versus 86 planned). Schedule delays resulted from the new multi-canister overpack (MCO) sealing strategy. Construction of the Cold Vacuum Drying (CVD) Facility is about four weeks behind schedule (48 percent complete versus 57 percent planned). The behind schedule condition is the result of delays in CVD panel erection due to a safety analysis hold which has since been lifted. The MCO basket fabrication was again placed on hold due to deficiencies in the fabricator's quality assurance practices. Redesign of the MCO's was initiated to improve the strength to handle up to 450 pounds per square inch (psi). The three remaining MCO transport casks will be delivered in April 1998 several months ahead of schedule. The WDOH approved the K West Basin Air Sparge System NOC permit. The first CVD vacuum processing skid was readied for delivery to the Site.

The B Plant 221-B canyon deactivation activities resumed after an almost two month delay due to high contamination levels. Good progress was made on canyon waste cleanup with no dose or contamination events occurring; full schedule recovery is expected. Eighty-two end points were signed off in February, bringing the total number closed to date to 852 (48 percent) for the project. Early completion of Project W-059, "B Plant Safety Ventilation Upgrade," canyon construction activities favorably impacted the overall project schedule by one week. Delays in Waste Acid Treatment System Phase II and 303K RCRA field activities continue to be experienced due to the recent concerns with beryllium and other hazardous constituents. Although contaminants exist at very low level concentrations, a Toxic Air Pollutant Permit is necessary. Plutonium Finishing Plant (PFP) RL FMMR Readiness Assessment Phase I was completed and declared acceptable to restart. The PFP Strategic Vision Plan was completed three days ahead of schedule. Some progress was made with the B Cell Project which is currently seven months behind schedule. Hot

cell work began in February. Air, water and electricity were relocated to the north window of the cell in support of fire hazards analysis compliance requirements for combustible material loading limits. With the initiation of hot cell work, efforts to minimize the schedule impact to the May 1999 *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) milestone M-89-02, "Complete Removal of Equipment and Mixed Waste from B Cell" are underway.

In the Landlord mission area, definitive design was initiated on schedule for Project L-281, "200 West Regional Drainfield." The Preliminary Engineering Report was submitted to WDOH for Project L-281, "200 West Regional Drainfield) four days ahead of schedule.

February was another successful month for the Environmental Restoration (ER) Project. Remediation of contaminated soil sites proceeded ahead of schedule. Remediation of all process trenches is nearly complete, and documentation is being prepared for regulator approval to backfill and reclaim the areas. Groundwater remediation activities are ongoing, with five pump-and-treat units operating at higher-than-planned availability levels. Decontamination and decommissioning (D&D) work in February focused on Interim Safe Storage (ISS) of the C reactor, preparation for ISS of the F and DR reactors, and 233-S Plutonium Concentration Facility demolition. D&D work is several weeks behind schedule, but recovery plans have been implemented. The N Basin scheduled completion date has been revised due to more extensive scope than anticipated. The ER Project is working with the regulators to extend the Tri-Party Agreement milestone for N Deactivation completion from April 1 to July 31.

Groundwater and Vadose Zone planning is underway. The ER Project is assembling a team to address vadose zone issues and integrate work between Hanford Site contractors. The planning approach document, *Management and Integration of Hanford Site Groundwater and Vadose Zone Activities* (DOE/RL-98-03, Draft A) was completed on February 13. Draft A included outlines and narratives for the development of a *Project Specification Plan*, *Project Management Plan*, *Cost and Schedule Baseline*, and the *Public Involvement Plan*. Reviews are expected in early March. Complementing delivery of the integrated approach were presentations to stakeholder groups on the proposed Groundwater/Vadose Zone approach. Presentations were made to the Tri-City Industrial Development Council on February 10; the Cultural Issues Committee on February 18; and the TWRS Partnering Group on February 19. The Hanford Advisory Board is also being apprised of Groundwater/Vadose Zone developments.

In the Science and Technology Mission area, the revised Hanford Facility RCRA Permit, Revision 4, was issued. Work plans for removing the sea water tank adjacent to the Plant Growth Facility and the waste oil separation system adjacent to the Program Development Lab-East (PDL-E) were drafted and the facility modification for PDL-E approved. The seawater tank adjacent to the Plant Growth Facility was removed on February 9, 1998. The low-level waste compactor is in place in the 325 Building, Room 43. The radiation work permits and technical procedures are in place and the x-ray unit will verify the contents of the first set of bagged waste in March. All required air and water samples were

collected during the month and confirmed that all effluents discharged were below historical release levels and compliant with existing permits. The volatile organic compound stack testing for the Environmental and Molecular Sciences Laboratory was completed and demonstrated that emissions are below the permit emissions limit. Construction is progressing as scheduled on the 325 Building Radioactive Liquid Waste Load Out Modifications.

In the Mission Support area, FY 2000 Budget Formulation Public Meetings were held in February. The primary communication tool for these meetings was the Integrated Priority List and the Project Specific Priority List. Work continued on the site systems analysis; the projected completion for the initial model is July 1998. Work also continued on the improvement of the data quality in the Hanford Site Technical Database; the quality measurement is now above 96 percent. The Environmental Support mission area completed four of five milestones on or ahead of schedule, dangerous Waste Reports for four separate Environmental Protection Agency (EPA) identification numbers were prepared for calendar year 1997. The facilities covered are the Hanford Site, Federal Building, 712 Building and 3000 Area. Installation of the new global positioning system (GPS) into the Computerized Off-Road-Vehicle Utilizing GPS and radiation-detection-devices is complete. An evaluation was performed on the feasibility of performing non-destructive analysis of gamma-ray activity from high-efficiency particulate air filters in the double-contained receiver tanks filter pits.

Hazardous Waste classes at the Hazardous Material Management and Emergency Response (HAMMER) Volpentest Training and Education Center in February were attended by 318 students (1,496 students have been trained FYTD). Sixty other classes were held in February with 896 students attending. A total of 4,265 students have been trained FYTD (excluding Hazardous Waste classes.) A train-the-trainer course was conducted for U. S. Customs Service personnel who will be responsible for training foreign border enforcement personnel on using advanced technologies for detection of weapons of mass destruction. The course was funded by U.S. Customs and conducted by Pacific Northwest's Office of Export Control and International Border Security. HAMMER is working with Pacific Northwest on the upcoming Bulgarian Foreign Border enforcement training scheduled for March 2, 1998. Sixty-five people toured HAMMER in February. Representatives from DOE National Labs; Port of Benton; Innovatek, Slovakia; FDH; and participants in National Engineers Week, received information regarding HAMMER, its partnerships, and its mission.

Advanced Reactors Transition Project continued to make significant progress. Technical accomplishments include continued progress on the Interim Examination and Maintenance Cell long assembly shear activities; approval of a revised Performance Agreement, which descoped the Open Test Assembly Shear Project and added the Solid Waste Cask (SWC) Hoist Drive Upgrade Project; and removal of the hoist assembly from the SWC to allow inspection of the drive system. Efforts continued in preparation of the Head Mounted Equipment Testing Report. Significant progress was made on the Performance Evaluation Plan milestone for preparation of the Annual System Assessment and Component Status

Report for Standby. Nuclear Energy Legacies progress included T Plant sodium test system removal work and cleaning the 1720-DR Tank.

In the TWRS Regulatory Unit, the SRD and the ISMP draft Evaluation Reports for BNFL and LMAES was released for public for comment on February 20, 1998. The detailed review of the BNFL Initial Safety Assessment (ISA) was completed on February 27, 1998. Revision 0 of the Regulatory Unit Corrective Action/Enforcement Action Program Description was issued to the contractors for information and comment. This is a companion document to the Inspection Program Description released in January.

ACCOMPLISHMENTS

- Conducted FY 2000 Budget Formulation Public Meetings. (Planned)
- Completed FMMR Phase I RL Readiness Assessment; Phase I declared acceptable for restart. (Planned)
- Completed PFP Strategic Vision. (Planned)
- Completed PRF elevator restoration enabling removal of cleanup waste from Room 40. (Planned)
- Obtained WDOH approval of upgrades to the air monitoring system for Project W-030, “Tank Farm Ventilation Upgrades”. (Planned)

COST PERFORMANCE ($M):

	BCWP	ACWP	Variance
Total Hanford Projects	$ 428.2	$ 429.2	$ 0

The $1.1 million (less than one percent) favorable cost variance is within established thresholds. The favorable cost variances in TWRS ($6.4 million), Landlord ($0.6 million), Environmental Restoration ($3.6 million), Science and Technology ($0.6 million), TWRS Regulatory Unit ($1.3 million), National Programs ($0.7 million), Advanced Reactor Transition ($0.2 million), and Technology Development ($0.3 million) are offset by the unfavorable cost variances in Spent Nuclear ($3.7 million), Facility Stabilization ($9.5 million), Support ($1.2 million), and HAMMER ($0.3 million).

SCHEDULE PERFORMANCE ($M):

	BCWP	BCWS	Variance
Total Hanford Projects	$428.2	$466.1	($37.)

The $37.9 million (eight percent) unfavorable schedule variance is primarily attributed to the following projects: TWRS ($11.6 million), SNF ($14.2 million), Facility Stabilization ($3.3 million) and ER (- $4.0 million).

The majority of the TWRS unfavorable schedule variance is attributed to the renegotiation required for data correlation studies; additional dome load analysis requirements for rotary mode core sampling, delays in Project W-314, “Tank Farm Upgrades,” delays in the establishment of the proposed Document Control Center, and the flammable gas safety analysis.

The SNF unfavorable schedule variance is due to the construction holds at KW Basin and the CVD wall panel erection. These holds were released in February. An additional hold on MCO procurement activities is still in effect awaiting the resolution of the MCO Sealing Strategy BCR. All variances are off the critical path leading to first movement of spent fuel and are recoverable.

The Facility Stabilization unfavorable schedule variance is attributed to B-Plant Canyon deactivation and 324 B-Cell workscope. Where possible, recovery plans have been implemented. However, the B Cell project is approximately seven months behind schedule and has impacted completion of (Tri-Party Agreement) Milestone M-89-02 (due May 1999).

The ER unfavorable schedule variance is due to slippage on the N Basin Cleanout Project and rescheduling various decommissioning activities. A request was made to the regulators to extend the N Basin deactivation milestone.

ISSUES

1) **Tank 241-SX-104 Waste Level Anomalies**: Anomalous level readings on Tank 241-SX-104 resulted in an extensive compliance investigation by the State of Washington, Department of Ecology (Ecology) to determine if the tank is leaking. As a result, the initiation of saltwell pumping of two tanks in FY 1998 is in jeopardy.

   Strategy/Status: A review of the delta level/delta pressure is in progress; installation of video camera and drywell testing is complete. Air permitting was approved by WDOH and is in review by EPA. Preliminary findings are that Tank 241-SX-104 is not leaking; final determination is expected by March 30, 1998.

2) **Tank 241-SY-101:** Tank 241-SY-101 is exhibiting a slow rise in the surface level. Gas is most likely accumulating in or under the floating crust; current tank surface level response to mixer pump operation is not consistent with behavior assumed in the safety analysis.

   Strategy/Status: An unreviewed safety question was declared on February 26, 1998. The path forward includes preparing for retained gas sampling, confirming

level measurements, evaluating other means of level measurement, evaluating mixer pump operating parameters and variations, preparing for characterization activities, and integrating data analysis.

3) **C-106 Sluicing**: Tri-Party Agreement Milestone M-45-03A, Initiate Sluicing Retrieval of 106-C, was missed in October of 1997. Technical safety issues delayed completion of the milestone.

Strategy/Status: A Pollution Control Board Hearing is scheduled for June 1998. An alternate schedule was reviewed with Ecology that shows a November 30, 1998, completion date and work is on schedule to meet this date.

4) **WDOH Approval of air monitor system for Project W-030**: Project W-030 startup delayed.

Strategy/Status: The National Emission Standard for Hazardous Air Pollutants Federal Facilities Compliance Agreement milestone due date was extended to March 29, 1998. Operational Readiness Review pre-start findings are being worked and a revised corrective action plan will be submitted in March 1998.

5) **Projected FY 1998 Cost Overruns**: Current review of SNF costs indicate a projected FY 1998 cost overrun which threatens the Project schedule for K Basin fuel removal.

Strategy/Status: Potential schedule impacts are being identified and reprogramming/funding source alternatives are being reviewed by the PHMC. Tri-Party Agreement milestones proposed which reflect uncertainties and impacts.

6) **Aluminum Hydroxide on K Basin Fuel**: The discovery of aluminum hydroxide on K Basin Fuel may require a redesign of the fuel retrieval system if additional water content cannot be accommodated.

Strategy/Status: Analytical and test requirements are being defined. The Advanced Work Authorization was used to initiate this workscope and a BCR will be prepared formalizing the direction.

7) **PFP Fissile Material Movement Restriction**: The self-imposed restriction has been in effect for 14 months. Affected activities include cementation of bulk plutonium-bearing materials, thermal stabilization of oxides and Segment #4 duct terminal clean out. Cost and schedule impacts and delays in obtaining approval to proceed are forecasted because of the work restriction.

Strategy/Status: The ten-day RL Readiness Assessment of Phase I was completed and declared acceptable for restart. Six findings and 13 observations were identified. The formal restart plan was completed on Corrective actions

resulting from the special nuclear material activities were completed on February 27, 1998.

8) **Tri-Party Agreement M-89-02, Complete Removal of Equipment and Mixed Waste from B Cell:** The B Cell Project has slipped seven months behind schedule jeopardizing completion of Tri-Party Agreement Milestone M-89-02 (due May 1999). The Fire Hazards Analysis presented a different scenario from the 324 Building Safety Analysis Report. This scenario questioned the probability of a major fire. All work in the hot cell, which could initiate a fire, was stopped until this issue is resolved.

Strategy/Status: Hot cell work resumed when in-cell service lines were relocated to the north window and some material was transported to the airlock to bring the inventory within the limits of the procedure. Although full schedule recovery is not expected, the B Cell Projects are being analyzed to identify other methods of accelerating completion of M-89-02.

KEY INTEGRATION ACTIVITIES

The following are the key integration activities that are currently underway and cross project lines. These activities are being addressed by inter-discipline and inter-project groups.

- **Issue:** Continued 2727-W operations, maintenance and surveillance.
  Interface: TWRS/Waste Management
  Status: Discussions underway.

- **Issue:** CSB availability for TWRS.
  Interface: TWRS/SNF/Waste Management
  Status: Defining interfaces; TWRS will utilize separate cask handling equipment.

- **Issue:** Exchange 46 inactive waste sites.
  Interface: ER/TWRS/Systems Engineering
  Status: Site walkdowns and TWRS exchange cost estimate is complete. Endpoint transfer criteria to be negotiated.

- **Issue:** BNFL sample residue waste returns.
  Interface: Waste Management/TWRS
  Status: BCR in process requesting $306,000 to dispose of waste.

- **Issue:** Providing Generator Services for TWRS.
  Interface: Waste Management/TWRS
  Status: Discussions ongoing.

- **Issue:** TWRS sludge settle and decant testing
  Interface: Facility Stabilization/TWRS/Pacific Northwest
  Status: Draft MOU prepared. Tasks will be conducted in 324 Building C-Cell during FY 1998 and FY 1999.

- **Issue:** 324 Building SNF removal.
  Interface: SNF/Facility Stabilization
  Status: Joint contractor team developing a plan; approved classification of 324 light water reactor fuel assemblies.

- **Issue:** Vaults for glass canisters.
  Interface: SNF/TWRS
  Status: Preparing programmatic agreement to define interface.

- **Issue:** N Basin fuel chips.
  Interface: SNF/ER
  Status: Established pathway to K Basins; first shipment completed.

- **Issue:** Fuel movement from 400 to 200 Area ISA.
  Interface: SNF/Acceptance Review Team (ART)
  Status: NOC for 200 Area ISA was coordinated with ART.

- **Issue:** K Basins deactivation integration.
  Interface: SNF/Facility Stabilization
  Status: Integrating Tri-Party Agreement milestones into SNF Project. BCR in process to transfer scope.

- **Issue:** Rail car deactivation.
  Interface: SNF/Waste Management/Facility Stabilization
  Status: Identifying alternatives for 100-K railcar wastes.

- **Issue:** Disposition of sodium coolant.
  Interface: ART/Facility Stabilization/TWRS/Waste Management
  Status: TWRS milestone M-50-03 confirmed advanced pretreatment will not be required. If FFTF is shutdown, the baseline will be developed considering the use of FFTF sodium to produce sodium hydroxide for TWRS use.

- **Issue:** Railroad shutdown.
  Interface: Landlord/TWRS/Waste Management/Facility Stabilization/ART/SNF
  Status: On schedule for September 30, 1998, completion.